Arkansas Public Service Commission

Rules for Conservation and Energy Efficiency Programs

Section 1: Purpose

In the Energy Conservation Endorsement Act of 1977 ("the Act"), the Arkansas General Assembly recognized that "enormous amounts of energy are wasted by consumers of all classes and economic levels due to inadequate insulation of buildings and other inefficiencies in the use of energy."[1] The Act states that "energy conservation programs and measures" are broadly defined and that "[i]t shall be considered a proper and essential function of public utilities regulated by the Arkansas Public Service Commission to engage in energy conservation programs, projects, and practices which conserve, as well as distribute, electrical energy and supplies of natural gas, oil, and other fuels."[2] Furthermore, Ark. Code Ann. §§ 23-3-405 provides the Commission with broad authority to not only develop and approve programs that will result in improved energy efficiency, but also with the authority to modify rates to recover the costs associated with such programs.

Due to the current high energy prices and the minimal level of energy efficiency programs in Arkansas, Commission action regarding energy efficiency is necessary. Consequently, the Commission has developed these rules. These rules apply to the provision of both electricity and natural gas service.

Section 2: Goals of Energy Efficiency Programs

[1] Ark. Code Ann. §23-3-402.

[2] Ark. Code Ann. §23-3-404.

An overriding question for any energy efficiency initiative should be the goals of the initiative. Goals can take the form of standards, codes, or programs. Specifically, the Commission is interested in determining what the balance should be among the following goals to be considered:

- Energy savings directly attributable to program activities (e.g., more emphasis on pushing energy efficiency technologies into the market that are shown to provide rapid payback on the initial investment);
- Long-term and permanent changes in behavior, attitudes, awareness, and knowledge about energy savings and use of energy efficient technologies (e.g., more emphasis on *market transformation*);
- Permanent peak demand reduction;
- Energy cost savings and cost-effectiveness;
- Reliability enhancements;
- Energy Security benefits;
- Environmental benefits;
- Economic development/competitiveness benefits;
- Increases in system-wide capacity;
- Accelerating the commercialization of advanced or emerging technologies;
- Improving affordability of energy for all customers;
- Implementing programs in an efficient manner; and
- Any other criteria not listed above.

When providing information on these issues, utilities are encouraged to describe, in quantitative terms, the benefits and costs of these different aspects of the program and to comment on the barriers towards adoption of energy efficiency measures and how to overcome these barriers. Utilities are also encouraged to provide estimates of the energy efficiency potential in Arkansas associated with these options.

Section 3: Definitions

Administrator – The entity responsible for creating and managing an energy efficiency portfolio.

Cost-effective – A standard for programs to be implemented after review of benefit/cost tests by the Commission that has a high probability of providing aggregate ratepayer benefits to the majority of utility customers.

Deemed Savings – A pre-determined, validated estimate of energy and peak demand savings attributable to an energy efficiency measure in a particular type of application that a utility may use instead of energy and peak demand savings determined through measurement and verification activities.

Demand Response – Changes in electric use by end use customers from their normal consumption patterns in response to changes in the price of energy over time, or to incentive payments designed to induce lower energy use at times of high wholesale market prices or when system reliability is jeopardized.

Energy Efficiency – Reducing the rate at which energy is used by equipment and/or processes. Reduction in the rate of energy used may be obtained by substituting technically more advanced equipment to produce at least the same level of end-use service with less energy; adoption of technologies and processes that reduce heat or other energy losses; or reorganization of processes to make use of otherwise wasted heat. Efficient use of energy by customer-owned end use devices implies that existing comfort levels are maintained or improved at a lower customer cost. Demand response programs shall be included in the definition of energy efficiency.

Energy Efficiency Savings – Energy efficiency (kW, kWh, ccf) savings are determined by comparing measured energy use before and after implementation of an energy savings measure.

Evaluation, Measurement, and Verification (EM&V) – Activities intended to determine the actual savings and other effects from energy efficiency programs and measures.

Implementer – An entity charged by a utility to deliver programs to customers. Implementers and utilities may be the same entity, or related by a contract.

Market transformation – Strategic efforts to induce lasting structural or behavioral changes in the market that result in increased adoption of energy efficient technologies, services and practices. Energy savings from market transformation programs must be beyond that which would be achieved through compliance with building codes and appliance and equipment efficiency standards.

Measure – equipment, materials and practices that when installed and used at a customer site result in a measurable and verifiable reduction in either purchased energy consumption, measured energy or peak demand or both.

Portfolio – the entire group of programs offered by an administrator

Program – a plan to deliver a particular energy efficiency service or set of services to a particular target population of customers, including a set of a benefit/cost test results, specific objectives that can be evaluated using quantifiable measures, and provisions to evaluate, monitor and verify results.

Program Plan – a plan to deliver a portfolio of energy efficiency programs.

Program Year – the year in which programs are administered and delivered, for the purposes of planning and reporting

Section 4: Administration and Implementation of Energy Efficiency Programs

All electric and gas utilities in Arkansas under the jurisdiction of the Commission shall be responsible for administration and implementation of energy efficiency programs within their service territories.

Each utility shall file an application for approval by the Commission of its portfolio of energy efficiency programs.

The energy efficiency program portfolio of each utility shall include programs for all customer classes.

Exemptions from these rules may be granted by the Commission in accordance with Rule 1.03 of the Commission's Rules of Practice and Procedure. Nothing in these Rules shall preclude the Commission on its own initiative or in response to a party's motion and after notice and hearing from modifying these Rules.

The Commission may designate an administrator independent of the utilities.

The Commission may permit retail customers to self-direct funds that would otherwise be collected in rates for energy efficiency. To do so, the Commission must find that the customer has a very large demand, that the customer is making substantial investments in energy efficiency and that special circumstances exist. The Commission must also find that self-direction will not produce an undue adverse effect on programs delivered by the administrator. Qualifying customers must requalify each year.

Section 5: Portfolio and Program Filing Requirements

General Requirements

Administrators shall propose general program designs, specific programs, and specific measures. Administrators may propose any of these jointly.

Programs should have a high probability of providing aggregate ratepayer benefits to the majority of ratepayers.

Each program shall identify the specific objectives of the program.

Each program shall identify the specific EM&V procedures that will be used to determine whether the program has achieved its stated objectives.

Portfolio Description and Support

Each portfolio filing shall address the following:

- Demonstration that the scope of programs serves all customer classes
- Portfolio benefit/cost analysis listing total costs and benefits, including expected savings goals for the portfolio
- Financial incentive plan, if authorized by the Commission
- Any additional supporting information the administrator may propose

Program Description and Support

Each program filing shall address the following:

- services to be provided;
- target population;
- all barriers being addressed and how they are being addressed;
- proposed customer incentives (if any);
- an evaluation, measurement and verification plan using an industry accepted protocol approved by the Commission;
- timeframe if the program term is limited;
- a plan for addressing over-subscription to the program;
- an analysis demonstrating that the program or measure is beneficial including the prescribed cost / benefit analyses; and
- any additional analyses the utility may propose.

Uniformity of Programs

Programs addressing both electric and gas customers shall be coordinated to the extent reasonable.

All programs filed under these rules shall be designed to be fuel neutral.

Deemed Savings Estimates

Program plans may use any deemed savings estimates approved by the Commission.

Customer Incentives

Programs may include incentives to encourage customers to make energy efficient investments if the incentives are cost justified and are a component of a program that has a high probability of providing aggregate ratepayer benefits to the majority of utility customers.

Incentives may include information, technical assistance, leasing programs, product giveaways and direct financial inducements. Financial inducements may include but are not limited to rebates, discounted products and services, and low rate financing.

The cost of incentives shall be considered in the benefit/cost testing of programs.

Incentives should be as low as is necessary to overcome the customers' barriers to invest in the measure and should be reduced or eliminated as the measure becomes more of a standard practice.

Statewide Programs

The Commission may direct utilities to offer uniform statewide energy efficiency and conservation programs if it determines such programs to be in the public interest.

Utilities may request approval to offer statewide or region-wide programs for which public messages, commercial terms and conditions, and customer reception are best served by such an approach.

Pilot Programs

The Commission may approve pilot energy efficiency programs. Such programs shall have characteristics from among the following:

- Addressing a new end use;
- Applying a new technology or a new delivery method;
- Implementing initial 'quick start' programs.

A pilot program design is distinct from program designs in that it shall include explicit questions that the pilot will address; explicit EM&V designed to address pilot questions; estimates of program costs and savings; a provisional benefit/cost evaluation; and shall be of limited duration until reassessment after a pre-determined period.

Program Filing Procedures

A program filed under these rules shall not be implemented until a Commission order is issued expressly approving the program.

The period from the filing date to the date of the Commission order shall be no more than one hundred and eighty days which will permit investigation, analysis, and adjudication of the program.

The Commission shall establish a procedural schedule for the review of each program filing.

Section 6: Benefit / Cost Tests

Administrators shall present sufficiently detailed calculations, sensitivity analyses, and supporting testimony of the effect of the proposed conservation and energy efficiency program using each of the following tests set forth in the California Standard Practice Manual (October 2001) (Manual): The Participant Test, The Ratepayer Impact Measure Test, The Total Resource Cost Test, and the Program Administrator Cost Test.

The Commission will rely on the formulae of the Manual. The Commission may rely on some inputs from the Manual and not on others. The Commission does not endorse the specific costs and benefits listed in the Manual nor does the Commission limit the costs and benefits that can be considered in the benefit/cost tests to those listed therein.

In calculating the prescribed benefit/cost tests, the administrators may use the analysis tool included in Attachment A or use a different process with advance approval of the Commission.

Administrators may submit additional economic analyses and benefit/cost test information in support of a proposed program.

An electric utility shall use either an average measure life of ten years to evaluate a program or program portfolio, or the actual measure lives for each measure in a program. A gas utility shall use either an average measure life of fifteen years to evaluate a program or program portfolio, or the actual measure lives for each measure in a program.

Results of the tests shall be presented consistent with the descriptions shown in Table 1, or by other means as approved by the Commission.

Table I

Cost-Effectiveness Tests

with Primary and Secondary Means of Expressing Test Results

Participant	
Primary	Secondary
Net present value (all participants)	Discounted payback (years) Benefit-cost ratio Net present value (average participant)
Ratepayer Impact Measure	
Lifecycle revenue impact per Unit of energy (kWh or therm) or demand customer (kW) Net present value	Lifecycle revenue impact per unit Annual revenue impact (by year, per kWh, kW, ccf, or customer) First-year revenue impact (per kWh, kW, ccf, or customer) Benefit-cost ratio
Total Resource Cost	
Net present value (NPV)	Benefit-cost ratio (BCR) Levelized cost (cents or dollars per unit of energy or demand) Societal (NPV, BCR)
Program Administrator Cost	
Net present value	Benefit-cost ratio Levelized cost (cents or dollars per unit of energy or demand)

Section 7: Cost Recovery

Cost recovery of conservation and energy efficiency programs shall be in accordance with the provisions of Ark. Code Ann. §23-3-401 *et. seq.* Cost recovery shall be limited

to the incremental costs which represent the direct program costs that are not already included in the then current rates of the utility.

A utility may request cost recovery through a surcharge or rider. If a utility requests cost recovery through a surcharge or rider, the cost recovery through that mechanism shall be limited to the incremental costs of providing the program that are not already included in the then current rates of the utility.

A utility may request that costs from approved program budgets be reflected in the rider.

Demand response programs that involve rates (e.g., interruptible service, curtailment, off-peak service, time of use rates) shall not be included in any surcharge or rider. The rates for those mechanisms will be established through ratemaking procedures.

Section 8: Program Plans

Beginning April 1, 2009, each electric and gas utility shall file a comprehensive set of program plans unless administration of programs has been previously delegated by the Commission, in which case each administrator shall file a comprehensive set of program plans by that date.

Program plans shall cover at least one year and may cover up to three years.

Program plans shall reflect the effects of all energy efficiency programs in their electric resource plans or natural gas procurement plans. All energy efficiency programs shall be consistent with each utility's current electric resource plans or natural gas procurement plans.

Section 9: Annual Reporting Requirements

By April 1 annually, each electric and gas utility shall file an annual report addressing the performance of all approved conservation and energy efficiency programs.

The report shall present the results of the prescribed EM&V measures for each program.

The report shall present the EM&V measures for the utility's portfolio.

The report shall present the amounts spent on each conservation and energy efficiency program and the total amounts spent on all programs.

If the costs of conservation and energy efficiency programs are recovered through a surcharge or rider, the report shall include a reconciliation, by program, of the amounts expended on conservation and energy efficiency programs and the amounts collected through the surcharge or rider.

Section 10: Records

All energy efficiency measures are subject to inspection by the Commission.

All records of energy efficiency programs shall be maintained in sufficient detail to permit a thorough audit and evaluation of all program costs and program performance.

Attachment A

[Here would be a reference to the Excel file, EconEval1e.xls, or its successor. A revised version will be available in early November 2006. Following is the first tab, the Overview tab, of that spreadsheet. The full spreadsheet appears in the report in Appendix C-2]

ARKANSAS ENERGY EFFICIENCY INITIATIVE
EE MEASURE/PROGRAM/PORTFOLIO ECONOMIC EVALUATION MODEL EXAMPLE

MODEL OVERVIEW

MODEL DESCRIPTION

- Performs 10-year benefit/cost analysis of selected energy efficiency measure/program/portfolios (one at a time).
- Actual "action" being evaluated is relatively short-term, until significant modifications are made. The intent is to take a longer-term look at the consequences of a short-term program, rather than to evaluate a specific long-term program.
- Calculates the Standard Cost Effectiveness tests (and their underlying input factors), as well as budget figures.
- Incorporates a range of potential effects, and alternative input parameter formulations
- Uses "annualization" of installed costs (and of one-time participant incentive payments) to deal with differences in specific measure/program/portfolio lifetimes, and to provide a reasonable analysis period, as described below.
- The inputs are intended to be flexible enough for the model to be applicable to gas as well as electric systems, and to cooperatively-owned as well as IOU systems.
- The inputs are intended to be flexible enough to accommodate a wide range of factors of potential interest to various parties.
- Several modeled effects, such as the effects of performance "degradation", can be effectively excluded by entering parameter values of "0" or "1", as appropriate.
- NOTE: A "UTILITY FINANCIAL OUTLOOK" CALCULATION IS ALSO INCLUDED. THIS IS NOT INTENDED AS A "TEST" CRITERION FOR MEASURES TO PASS OR FAIL, BUT RATHER AS AN INDICATOR OF HOW A UTILITY MIGHT VIEW A PARTICULAR MEASURE'S OVERALL FINANCIAL VIABILITY. IT IS A MODIFICATION OF THE STANDARD "UTILITY TEST" THAT ADDS LOST REVENUES TO THE COSTS, AND ADDS LOST REVENUE RECOVERY AND UTILITY FINANCIAL INCENTIVE TO THE BENEFITS.

MODEL (WORKBOOK) STRUCTURE

- The first two worksheets present the required input parameter values; "Global" and "System" parameters (a single page), followed by "Measure (/ Program / Portfolio" parameters (a separate page), as described below.
- The next worksheet, "CALC-Test Elements" performs the detailed calculations required to develop the numerous inputs required for the various benefit/cost tests, budget calculation, financial outlook, etc. They repeat some of the key input parameters, and are meant to be readily decipherable.
- The next worksheet, "CALC-Tests", first repeats the results of the test element calculations, and then applies them as appropriate to develop the standard benefit/cost tests, budget calculation, financial outlook, etc.
  - The benefit/cost tests are carried out on an annual basis, as well as a 10-year cumulative present worth basis, and presented in terms of net savings or loss, as well as benefit/cost ratio.
- The final worksheet, "SUMMARY", simply repeats some of the input description and assumptions, and results of the benefit/cost tests.
- A package of outputs for covering a system's proposed EE plan contents might consist of:
  - A" SUMMARY" page for each Measure/Program/Portfolio included in a "Report", plus an appendix containing:
  - A single copy of the "INPUTS-Global&System" page (since this is common for all Measures/Programs/Portfolios),
  - and copies of the "INPUTS-Measure" "CALC-Test Elements", and "CALC-Tests" pages for each Measure included.

MODEL INPUTS

- Inputs broken down into three categories: "Global", "System" and "Measure(/Program/Portfolio)
  - "Global" inputs are meant to be parameters that should be similar from system to system.
  - "System" inputs should be common for all Measures(/Programs/Portfolios) for a given system. They should be consistent with the "Global" input values.
  - "Measure(/Program/Portfolio)" inputs are meant to be specific to a particular Measure for a given system.
  - The "Global" and "System" input page should be identical for all measures for a given system.

ANNUALIZATION

- "Annualization" uses a discount rate and a specific lifetime to calculate an equivalent "annualization" factor.
  - This is essentially a "return-less" carrying charge rate approach.
- Assumes interim replacements during evaluation period for analysis purposes; actual program may or may not provide for such replacements.